AUTHOR INDEX

Al-Safadi, B. 361
Allen, L. H. Jr 175
Arditti, J. 207
Argüello, J. A. 9
Armstrong, R. A. 51
Arnold, F. B. 75
Ashraf, M. 93, 475

Baker, J. T. 175
Bandu, V. H. 515
Banwart, W. L. 435
Barceló, J. 271
Behera, Y. N. 181
Bennassar, A. 271
Bennet, R. J. 515
Benzing, D. H. 207
Binyamini, N. 127
Biswal, B. 181
Boerner, R. E. J. 525
Boonpragob, K. 415
Bowes, G. 175
Brashers, L. K. 391
Brawley, J. 43
Breen, C. M. 515
Breeze, V. G. 405
Breininger, M. Th. 165

Cabot, C. 271
Camp, C. R. 75
Cantliffe, D. J. 349
Cazell, B. H. 469
Collins, B. S. 67
Croci, C. A. 9
Curtiss, B. 293

DeLaune, R. D. 243
Diebel, K. E. 309
Duran, J. M. 1

Feder, W. A. 451
Feldhake, C. M. 111
Feret, P. P. 309
Foster, J. G. 497
Frutos, G. 383
Fulford, G. B. 343

Garten, C. T. Jr 333
Garty, J. 127
Ghazi, M. 235
Ghoshroy, S. 187

Hale Marie, B. 463
Hampton, R. E. 85
Hanson, P. J. 333
Havaux, M. 101
Hawkins, J. L. 17
Huslig, S. M. 489

Ibrahim, A. M. 265

Jacques, D. J. 525
Jensen, K. F. 59

Klein, R. M. 397
Klemm, O. 35
Knorre, U. 193
Kohut, R. J. 157
Kuran, H. 373

Laurence, J. A. 157
Lauver, T. L. 157
Leskovar, D. I. 349
Lindblad, P. 429
Lopez-Vences, M. 1
Lutz, H. J. 165

MacLeod, R. D. 225
Mandl, R. H. 157
Marciniak, K. 373
Marco, E. 119
Martinez, F. 119
Mathes, M. C. 43
McDonald, R. E. 505
McDuffie, C. Jr 313
McMichael, B. L. 27
McNeilly, T. 475
Mebrahtu, T. 443
Mehmood, S. 93
Mengel, K. 165
Mersie, W. 443
Miller, M. W. 403
Mor, Y. 455
Murray, F. 215, 343
Myers, G. A. 235

Nadakavukaren, M. J. 187
Nash, T. H. III. 415
Nordenbrock, C. 175
Nyman, L. P. 207

Olszewska, M. J. 373
Oosterhuis, D. M. 85, 149
Orcutt, D. M. 497
Orioli, G. A. 9
Ormrod, D. P. 463
Orus, M. I. 119

Pardue, J. H. 243
Patton, R. L. 59
Peters, D. B. 435
Peterson, J. C. 525
Pezeshki, S. R. 243
Pier, P. A. 313
Poschenrieder, Ch. 271
Prasad, M. N. V. 251

Rangappa, M. 443
Reddy, G. N. 251
Rensburg, E. van 405

Retamal, N. 1
Rowland-Bamford, A. J. 175

Sadler, E. J. 75
Samuelson, L.J. 469
Schaedle, M. 117
Schaub, H. 193
Schier, G. A. 325
Scott, H. D. 85
Secor, G. A. 355
Seiler, J. R. 469
Sharik, T. L. 309
Shen, L. 497
Sheppard, S. C. 17
Shrier, R. 451
Simon, P. W. 361
Simon, T. L. 391
Smith, C. R. 435
Smith, M. W. 489
Sojka, R. E. 75
Spacie, A. 265
Srivastava, H. S. 463
Stafford, R. E. 27
Stoffella, P. J. 349

Tadera, K. 429
Taylor, R. J. 355
Temple, P. J. 207, 283
Thornton, F. C. 313
Torres, M. 383

Ustin, S. L. 293

Vasilas, B. L. 435
Vázquez, M. D. 271
Vu, J. C. V. 505

Walker, W. M. 435
Walsh, G. E. 391
Weber, D. E. 391
Wein, G. R. 67
West, C. P. 149
Wignarajah, K. 141
Wilson, S. 215
Wullschleger, S. D. 85, 149

Yagi, F. 429
Yelenosky, G. 505

Zieslin, N. 455
Zwoch, I. 193

SUBJECT INDEX

Acer rubrum
foliar retention of ^{15}N-nitrate and ^{15}N-ammonium by red maple ( ) and white oak (*Quercus alba*) leaves from acid rain 333
Acetylene reduction
short-term influence of nitrate on net photosynthesis, nodule respiration and, in black alder (*Alnus glutinosa* L. Gaertn.) seedlings 469
Acid neutralizing
of leaf surfaces: a call for a standard unit 35
Acid rain, simulated
effect of, on reproductive attributes of red spruce (*Picea rubens* Sarg.) 309
lack of physiological response of two corn hybrids to 435
response of yellow-poplar (*Liriodendron tulipifera* L.) seedlings to ozone and,—I. Growth modifications 59
response of yellow-poplar (*Liriodendron tulipifera* L.) seedlings to ozone and,—2. Effect on throughfall chemistry and nutrients in the leaves 325
Acidic cloud deposition
response of growth, photosynthesis and mineral nutrition of red spruce seedlings to ozone and, ... 313
Acidic fog, simulated
effect of, on carbohydrate leaching, CO_2 assimilation and development of damage symptoms in young spruce trees (*Picea abies* L. Karst) 165
Alkaloids, steroidal, action of
on the ground meristem tissue of the root axis of lettuce seedlings 235
Allium sativum L. (garlic)
effect of gamma rays on sprouting of seed cloves of,: levels of auxin-like substances and growth inhibitors 9
Alnus glutinosa (L. Gaertn.)
short-term influence of nitrate on acetylene reduction, net photosynthesis and nodule respiration in black alder ( ) seedlings 469
Amino acids, free
influence of drought on the concentration and distribution of 2,4-diaminobutyric acid and other, in tissues of flatpea (*Lathyrus sylvestris* L.) 497
Anabena PCC 7119
physiological alterations induced by the organophosphorus insecticide trichlorfon in, growth with nitrates 119
Analysis, logistic function
of germination behavior of aged fennel seeds 383
Artificial sediments
for use in tests with wetland plants 391
Arachis hipogaea L.
effect of gamma-irradiation on germination and electrolyte leakage from peanut ( ) seeds 1
Assimilation, CO_2
effect of simulated acidic fog on carbohydrate leaching, and development of damage symptoms in young spruce trees (*Picea abies* L. Karst) 165
Atrazine
response of corn to combinations of propyl gallate, ozone and 443
Auxin-like substances
effect of gamma rays on sprouting of seed cloves of garlic (*Allium sativum* L.) levels of growth inhibitors and of 9
Azoxyglycosides, occurrence of
in *Macrozamia riedlei* and their effects on the free-living isolated *Nostoc* PCC 73102 429
Beans
phytotoxic effects of technetium-99 in, : influence of cotyledon excision 271
Bean, response to nitrogen dioxide
photosynthetic photon flux effects on 463
Black alder
short-term influence of nitrate on acetylene reduction, net photosynthesis and nodule respiration in, (*Alnus glutinosa* L. Gaertn.) seedlings 469
Blackening
of rose petals, u.v.-induced 455
Brassica species
response of four, to drought stress 93
response of four, to sodium chloride 475
Buffer, oxidation–reduction
an, for evaluating the physiological response of plants to root oxygen stress 243
Ca supply
effects of stress and, on uptake and translocation of Ca in two poinsettia cultivars 525

Ca, translocation of
effects of Ca supply and stress on uptake and, in two poinsettia cultivars 525
Ca^{2+}, a role for
in the cellular differentiation of root cap cells: a re-examination of root growth control mechanisms 515
Cadmium, influence of
on the ultrastructure of developing chloroplasts in soybean and corn 187
Calcium
the influence of magnesium and, on the growth of the lichens *Parmelia saxatilis* and *Xanthoria parietina* on slate substrates 51
Calli, potato protoplast-derived
relationship of population size and regeneration medium to growth and shoot induction of 355
Callus tissue
the influence of NaCl on the growth of English ivy (*Hedera helix*) cuttings and 43
Canopy temperature
a comparison of pressure chamber, leaf-press, and, for four species under humid conditions 75
Carbohydrates, non-structural
protein, organic acids and, in the flowers of sweet orange (*Citrus sinensis* (L.) Osbeck) 505
Carrot (*Daucus carota* L.) tissue culture
the effects of gamma irradiation on the growth and cytology of 361
Cellular differentiation
a role for Ca^{2+} in the, of root cap cells: a re-examination of root growth control mechanisms 515
Characteristics, spectral
of ozone-treated conifers 293
Chloroplasts, ultrastructure of developing
in soybean and corn; influence of cadmium on the 187
Citrus sinensis (L.) Osbeck
proteins, non-structural carbohydrates and organic acids in the flowers of sweet orange ( ) 505
Cloud deposition, acidic
response of growth, photosynthesis and mineral nutrition of red spruce seedlings to ozone and, ... 313
CO_2 assimilation
effect of simulated acidic fog on carbohydrate leaching, and development of damage symptoms in young spruce trees (*Picea abies* L. Karst) 165
CO_2 regimes, various
changes in stomatal density in rice grown under, with natural solar irradiance 175
Cold treatment
analysis of mitotic synchrony induced by, in root meristems of *Vicia faba* L. 373
Comparison, a
of pressure chamber, leaf-press, and canopy temperature for four species under humid conditions 75
Conifers, ozone-treated
spectral characteristics of 293
Control mechanisms, root growth
a role for Ca^{2+} in the cellular differentiation of root cap cells: a re-examination of, ... 515
Corn
influence of cadmium on the ultrastructure of developing chloroplasts in soybean and 187
Corn hybrids
lack of physiological response of two, to simulated acid rain 435
Corn, response of
to combinations of atrazine, propyl gallate and ozone 443
Cotyledon excision, influence of
on phytotoxic effects of technetium-99 in beans 271
Cytology
and growth of carrot (*Daucus carota* L.) tissue culture. The effects of gamma irradiation on, ... 361
2,4-D Butyl [^{14}C]
uptake and development of phytotoxicity following exposure to vapour of the herbicide, by tomato and lettuce plants 405
2,4-Diaminobutyric acid
influence of drought on the concentration and distribution of, and other free amino acids in tissues of flatpea (*Lathyrus sylvestris* L.) 497
Damage symptoms, development of
effect of simulated acidic fog on carbohydrate leaching, CO_2 assimilation and, in young spruce trees (*Picea abies* L. Karst) 165
Daucus carota L.
the effects of gamma irradiation on the growth and cytology of carrot (,) tissue culture 361

Density, stomatal, changes in
in rice grown under various CO_2 regimes with natural solar irradiance 175
Development, root
primary root and lateral, in guar seedlings 27
Differentiation, cellular, of root cap cells
a role for Ca^{2+} in the , : a re-examination of root growth control mechanisms 515
Direct-seeded pepper plants
root growth and root–shoot interaction in transplants and 349
Drought
influence of flood-preconditioning and, on leaf gas exchange and plant water relations in seedlings of pecan 489
Drought, influence of
on the concentration and distribution of 2,4-diaminobutyric acid and other free amino acids in tissues of flatpea (*Lathyrus sylvestris* L.) 497
Drought stress
response of four *Brassica* species to 93
Dry deposition accumulation
seasonal variation of elemental status in the lichen *Ramalina menziesii* Tayl. from two sites in southern California: evidence for 415
Elemental status
seasonal variation of, in the lichen *Ramalina menziesii* Tayl. from two sites in southern California: evidence for dry deposition accumulation 415
Energy conversion, photochemical
photoacoustic study of the, in *Epilobium* plants grown under very low light conditions 101
English ivy (*Hedera helix*)
cuttings and callus tissue, influence of NaCl on the growth of 43
Epilobium plants
grown under very low light conditions; photoacoustic study of the photochemical energy conversion in 101
Epiphytic orchids
effects of ozone and sulfur dioxide on two 207
Ethylene synthesis in sunflower
influence of SO_2 and O_3, singly or in combination, on 193
Eucalyptus gomphocephala
morphogenic changes in, exposed to SO_2 343
Fennel seeds,
germination behavior of aged; logistic function analysis of 383
Fern, leaf senescence in
effect of duration, intensity and quality of light on 181
Fescue, tall
osmotic adjustment in tissues of, in response to water deficit 149
Fire, forest
establishment of pioneer litho-microorganisms on chalk rocks after a severe, in Israel 127
Flatpea (*Lathyrus sylvestris* L.)
influence of drought on the concentration and distribution of 2,4-diaminobutyric and other free amino acids in tissues of 497
Flood-preconditioning
influence of drought and, on leaf gas exchange and plant water relations in seedlings of pecan 489
Flooding, short-term
physiological responses of two soybean (*Glycine max* (L.) Merr) cultivars to 85
Flowers, of sweet orange
proteins, non-structural carbohydrates and organic acids in the, (*Citrus sinensis* (L.) Osbeck) 505
Fog, simulated acidic
effect of, on carbohydrate leaching, CO_2 assimilation, and development of damage symptoms in young spruce trees (*Picea abies* L. Karst) 165
Foliar retention
of ^{15}N-nitrate and ^{15}N-ammonium by red maple (*Acer rubrum*) and white oak (*Quercus alba*) leaves from simulated rain 333
Forest fire
establishment of pioneer litho-microorganisms on chalk rocks after a severe, in Israel 127
Gamma-irradiation
effect of, on germination and leakage of electrolytes from peanut (*Arachis hipogaea* L.) seeds 1
the effects of, on the growth and cytology of carrot (*Daucus carota* L.) tissue culture 361
Gamma rays
effect of, on sprouting of seed cloves of garlic (*Allium sativum* L.): levels of auxin-like substances and growth inhibitors 9
Garlic (*Allium sativum* L.)
effect of gamma rays on sprouting of seed cloves of, : levels of auxin-like substances and growth inhibitors 9

Gas exchange, leaf
influence of flood-preconditioning and drought on plant water relations and, in seedlings of pecan 489
Germination
and leakage of electrolytes from peanut (*Arachis hipogaea* L.) seeds; effect of gamma-irradiation on 1
of aged fennel seeds. Logistic function analysis of..... 383
protein, organic acids and, in the flowers of sweet orange (*Citrus sinensis* (L.) Osbeck)..... 505
Growth modifications
response of yellow-poplar (*Liriodendron tulipifera* L.) seedlings to simulated acid rain and ozone—I 59
Growth, of *Heterotheca subaxillaris*
and water relations, in different soil and watering treatments in the greenhouse 67
Growth, of lichens
Parmelia saxatilis and *Xanthoria parietina*, influence of calcium and magnesium on the, on slate substrates 51
Growth, pollen tube
combination of u.v.-B and ozone reduces, more than either stressor alone 451
Growth response, of *Phaseolus vulgaris*
to varying salinity regimes 141
Growth, root
and root–shoot interaction in transplants and direct-seeded pepper plants 349
Ground meristem tissue
the action of steroidal alkaloids on the, of the root axis of lettuce seedlings 235
Heavy metal-binding proteins/peptides
: occurrence, structure, synthesis and functions. A review 251
Hedera helix (English ivy)
cuttings and callus tissue, influence of NaCl on the growth of 43
HF (hydrogen fluoride)
yield responses of soybean, maize, peanut and navy bean exposed to SO_2, , and their combination 215
Heterotheca subaxillaris
water relations and growth of, in different soil and watering treatments in the greenhouse..... 67
Hormesis, radiation
of seedlings and seeds, simply elusive or an artifact?..... 17
Humid conditions
a comparison of pressure chamber, leaf-press, and canopy temperature for four species under 75
Inorganic selenium, toxicity of
to the green alga *Selenastrum capricornutum* Printz 265
Insecticide, organophosphorus
physiological alterations induced by the, trichlorfon in *Anabena* PCC 7119 grown with nitrates 119
Irradiation, gamma
the effects of, on the growth and cytology of carrot (*Daucus carota* L.) tissue culture 361
Israel, forest fire in
establishment of pioneer litho-microorganisms on chalk rocks after a severe..... 127
Lateral root development
primary root and, in guar seedlings 27
Lateral root primordium
inception of, in *Zea mays* L. 225
Lathyrus sylvestris L.
influence of drought on the concentration and distribution of 2,4-diaminobutyric acid and other free amino acids in tissues of flatpea ( ) 497
Leaf gas exchange
influence of flood-preconditioning and drought on, and plant water relations in seedlings of pecan 489
Leaf-press
a comparison of pressure chamber, canopy temperature and, for four species under humid conditions 75
Leaf senescence in fern
effect of duration, intensity and quality of light on..... 181
Leaf surfaces
acid neutralizing of : a call for a standard unit..... 35
Leakage, of electrolytes
effect of gamma-irradiation on germination and, from peanut (*Arachis hipogaea* L.) seeds 1
Lettuce
uptake and development of phytotoxicity following exposure to vapour of the herbicide ^{14}C 2,4-D butyl by tomato and lettuce plants 405
Lettuce seedlings
the action of steroidal alkaloids on the ground meristem tissue of the root axis of 235

Lichen (*Ramalina menziesii* Tayl.)
seasonal variation of elemental status in the, from two sites in southern California: evidence for dry deposition accumulation 415
Lichens
the influence of calcium and magnesium on the growth of the, *Parmelia saxatilis* and *Xanthoria parietina* on slate substrates 51
Light band, spectral characteristics of the
on red clover (*Trifolium pratense* L.) 111
Light; duration, intensity and quality of
leaf senescence in fern: effect of 181
Liriodendron tulipifera (yellow-poplar) seedlings
response of, to simulated acid rain and ozone—I. Growth modifications 59
Litho-microorganisms, pioneer
establishment of, on chalk rocks after a severe forest fire in Israel 127
Logistic function analysis
of germination behaviour of aged fennel seeds 383
Low light conditions
photoacoustic study of the photochemical energy conversion in *Epilobium* plants grown under..... 101
Lycopersicon esculentum Mill.
growth and yield responses of processing tomato ( ) cultivars to ozone 283
Lysimeter weighing
for determining water loss in red spruce saplings (*Picea rubens* Sarg.) 157
Macrozamia riedlei
occurrence of azoxyglycosides in, and their effects on the free-living isolated *Nostoc* PCC 73102 429
Magnesium
the influence of calcium and, on the growth of the lichens *Parmelia saxatilis* and *Xanthoria parietina* on slate substrates 51
Maize
yield responses of soybean, peanut, navy bean and, exposed to SO_2, HF and their combination 215
Maple, red (*Acer rubrum*)
foliar retention of ^{15}N-nitrate and ^{15}N-ammonium by white oak (*Quercus alba*) and, leaves from simulated rain 333
Measurement of photosynthesis
(book review: *New Vistas in the Measurement of Photosynthesis*, D. A. Walker and C. B. Osmond, eds) 117
Medium, regeneration
relationship of population size and, to growth and shoot induction in potato protoplast-derived calli 355
Meristem tissue, ground
the action of steroidal alkaloids on the, of the root axis of lettuce seedlings 235
Meristems, root
of *Vicia faba* L. Analysis of mitotic synchrony induced by cold treatment in..... 373
Mineral nutrition
response of growth, photosynthesis and, of red spruce seedlings to ozone and acidic cloud deposition 313
Mitotic synchrony, analysis of
induced by cold treatment in root meristems of *Vicia faba* L..... 373
Morphogenic changes
in *Eucalyptus gomphocephala* exposed to SO_2 343
^{15}N-Ammonium
foliar retention of ^{15}N-nitrate and, by red maple (*Acer rubrum*) and white oak (*Quercus alba*) leaves from simulated rain 333
NaCl
influence of, on the growth of English ivy (*Hedera helix*) cuttings and callus tissues..... 43
Navy bean
yield responses of soybean, maize, peanut and, exposed to SO_2, HF and their combination 215
Nitrate, short-term influence of
on acetylene reduction, net photosynthesis and nodule respiration in black alder (*Alnus glutinosa* L. Gaertn.) seedlings 469
Nitrogen dioxide
photosynthetic photon flux effects on bean response to, ... 463
Nodule respiration
short-term influence of nitrate on acetylene reduction, net photosynthesis and, in black alder (*Alnus glutinosa* L. Gaertn.) seedlings 469
Non-structural carbohydrates
proteins, organic acids and, in the flowers of sweet orange (*Citrus sinensis* (L.) Osbeck)..... 505
Nostoc PCC 73102, isolated
occurrence of azoxyglycosides in *Macrozamia riedlei* and their effects on the free-living 429
Nutrients in the leaves
response of yellow-poplar (*Liriodendron tulipifera* L.) seedlings to simulated acid rain and ozone—2. Effect on throughfall chemistry and..... 325

O_3, influence of
and SO_2, singly or in combination, on ethylene synthesis in sunflower 193
Oak, white (*Quercus alba*)
foliar retention of ^{15}N-nitrate and ^{15}N-ammonium by red maple (*Acer rubrum*) and, leaves from simulated rain 333
Orange, sweet
proteins, non-structural carbohydrates and organic acids in the flowers of , (*Citrus sinensis* (L.) Osbeck)..... 505
Orchids, epiphytic
effects of ozone and sulfur dioxide on two 207
Organic acids
proteins, non-structural carbohydrates and, in the flowers of sweet orange (*Citrus sinensis* (L.) Osbeck) 505
Osmotic adjustment
in tissues of tall fescue in response to water deficit 149
Oxidation–reduction buffer
an, for evaluating the physiological response of plants to root oxygen stress..... 243
Oxygen stress, root
an oxidation–reduction buffer for evaluating the physiological response of plants to 243
Ozone
growth and yield responses of processing tomato (*Lycopersicon esculentum* Mill.) cultivars to 283
response of corn to combinations of atrazine, propyl gallate and 443
response of growth, photosynthesis and mineral nutrition of red spruce seedlings to acidic cloud deposition and .. 313
response of yellow-poplar (*Liriodendron tulipifera* L.) seedlings to simulated acid rain and,—1.Growth modifications 59
Ibid.—2. Effect of throughfall chemistry and nutrients in the leaves..... 325
Ozone and u.v.-B, combination of
reduces pollen tube growth more than either stress alone 451
Ozone; effects of
and sulfur dioxide on two epiphytic orchids..... 207
Ozone-treated conifers
spectral characteristics of 293
Parmelia saxatilis
and *Xanthoria parietina*; the influence of calcium and magnesium on the growth of the lichens, on slate substrates.. 51
Peanut
yield responses of soybean, maize, navy bean and, exposed to SO_2, HF and their combination 215
Peanut seeds
effect of gamma-irradiation on germination and electrolyte leakage from, (*Arachis hipogaea* L.) 1
Pecan, seedlings of
influence of flood-preconditioning and drought on leaf gas exchange and plant water relations in 489
Pepper plants
root growth and root–shoot interaction in transplants and direct-seeded 349
Phaseolus vulgaris, growth response of
to varying salinity regimes 141
Photoacoustic study
of the photochemical energy conversion in *Epilobium* plants grown under very low light conditions 101
Photochemical energy conversion
photoacoustic study of the, in *Epilobium* plants grown under very low light conditions 101
Photon flux, photosynthetic
effects on bean response to nitrogen dioxide..... 463
Photosynthesis
response of growth, mineral nutrition and, of red spruce seedlings to ozone and acidic cloud deposition 313
measurements of (book review: *New Vistas in the Measurement of Photosynthesis*, D. A. Walker and C. B. Osmond, eds) 117
Photosynthesis, net
short-term influence of nitrate on acetylene reduction, nodule respiration and, in black alder (*Alnus glutinosa* L. Gaertn.) seedlings 469
Photosynthetic photon flux
effects on bean response to nitrogen dioxide..... 463
Physiological alterations in *Anabena* PCC 7119
induced by the organophosphorus insecticide trichlorfon (when) grown with nitrates..... 119
Physiological response
of plants to root oxygen stress; an oxidation–reduction buffer for evaluating the..... 243
Physiological response, lack of
of two corn hybrids to simulated acid rain 435
Physiologial responses
of two soybean (*Glycine max* (L.) Merr.) cultivars to short-term flooding..... 85
Phytotoxic effects
of technetium-99 in beans: influence of cotyledon excision..... 271

Phytotoxicity
uptake and development of, following exposure to vapour of the herbicide ^{14}C 2,4-D butyl by tomato and lettuce plants 405
Picea abies L. Karst
effect of simulated acidic fog on carbohydrate leaching, CO_2 assimilation and development of damage symptoms in young spruce trees 165
Picea rubens (Sarg.)
a weighing lysimeter for determining water loss in red spruce ( ) seedlings 157
effect of simulated acid rain on reproductive attributes of red spruce ( ) 309
Pioneer litho-microorganisms, establishment of
on chalk rocks after a severe forest fire in Israel 127
Poinsettia cultivars
effects of Ca supply and stress on uptake and translocation of Ca in two,..... 525
Pollen tube growth
combination of u.v.-B and ozone reduces, more than either stressor alone 451
Population size
relationship of, and regeneration medium to growth and shoot induction of potato protoplast-derived calli 355
Potato protoplast-derived calli
relationship of population size and regeneration medium to growth and shoot induction 355
Pressure chamber
a comparison of leaf-press, canopy temperature, and, for four species under humid conditions 75
Primary root
and lateral root development in guar seedlings 27
Primordium, lateral root
inception of, in *Zea mays* L. 225
Propyl gallate
response of corn to combinations of atrazine, ozone and 43
Proteins
, non-structural carbohydrates and organic acids in the flowers of sweet orange (*Citrus sinensis* (L.) Osbeck)..... 505
Proteins/peptides; heavy metal-binding
: occurrence, structure, synthesis and functions. A review 251
Protoplast-derived calli, potato
relationship of population size and regeneration medium to growth and shoot induction of 355
Quercus alba
foliar retention of ^{15}N-nitrate and ^{15}N-ammonium by red maple (*Acer rubrum*) and white oak ( ) leaves from simulated rain..... 333
Radiation hormesis
of seedlings and seeds, simply elusive or an artifact?..... 17
Rain, simulated
foliar retention of ^{15}N-nitrate and ^{15}N-ammonium by red maple (*Acer rubrum*) and white oak (*Quercus alba*) leaves from 333
Ramalina menziesii Tayl.
seasonal variation of elemental status in the lichen *Ramalina menziesii* Tayl. from two sites in southern California: evidence for dry deposition accumulation 415
Red clover (*Trifolium pratense* L.)
spectral characteristics of the light band on 111
Red maple (*Acer rubrum*)
foliar retention of ^{15}N-nitrate and ^{15}N-ammonium by white oak (*Quercus alba*) and, leaves from simulated rain 333
Red spruce (*Picea rubens* Sarg.)
effect of simulated acid rain on reproductive attributes of..... 309
Red spruce saplings, water loss in
a weighing lysimeter for determining, (*Picea rubens* Sarg.)..... 157
Red spruce seedlings
response of growth, photosynthesis and mineral nutrition of, to ozone and acidic cloud deposition 313
Regeneration medium
relationship of population size and, to growth and shoot induction of potato protoplast-derived calli 355
Reproductive attributes
of red spruce (*Picea rubens* Sarg.); effect of simulated acid rain on..... 309
Respiration, nodule
short-term influence of nitrate on acetylene reduction, net photosynthesis and, in black alder (*Alnus glutinosa* L. Gaertn.) seedlings 469
Responses, physiological
of two soybean (*Glycine max* (L.) Merr.) cultivars to short-term flooding..... 85
Response, to drought stress
of four *Brassica* species 93

Responses, to sodium chloride
of four *Brassica* species 475
Responses, yield
of soybean, maize, peanut and navy bean exposed to SO_2, HF and their combination 215
Retention, foliar
of ^{15}N-nitrate and ^{15}N-ammonium by red maple (*Acer rubrum*) and white oak (*Quercus alba*) leaves from simulated rain 333
Review
heavy metal-binding proteins/peptides: occurrence, structure, synthesis and functions..... 251
Rice
changes in stomatal density in, grown under various CO_2 regimes with natural solar irradiance..... 175
Rocks, chalk
establishment of pioneer litho-microorganisms on, after a severe forest fire in Israel 127
Root axis
the action of steroidal alkaloids on the ground meristem tissue of the , of lettuce seedlings 235
Root cap cells
a role for Ca^{2+} in the cellular differentiation of ,: a re-examination of root growth control mechanisms..... 515
Root growth
and root–shoot interaction in transplants and direct-seeded pepper plants 349
Root growth control mechanisms
a role for Ca^{2+} in the cellular differentiation of root cap cells: a re-examination of 515
Root, lateral
primary root and , development in guar seedlings..... 27
Root meristems
of *Vicia faba* L. Analysis of mitotic synchrony induced by cold treatment in..... 373
Root oxygen stress
an oxidation–reduction buffer for evaluating the physiological response of plants to 243
Root, primary
and lateral root development in guar seedlings 27
Root primordium, lateral
inception of, in *Zea mays* L. 225
Root–shoot interaction
root growth and, in transplants and direct-seeded pepper plants 349
Rose petals
u.v.-induced blackening of..... 455
Salinity
growth response of *Phaseolus vulgaris* to 141
Saplings, red spruce
a weighing lysimeter for determining water loss in, (*Picea rubens* Sarg.)..... 157
Seasonal variation
of elemental status in the lichen *Ramalina menziesii* Tayl. from two sites in southern California: evidence for dry deposition accumulation..... 415
Sediments, artificial
for use in tests with wetland plants..... 391
Seed cloves
of garlic (*Allium sativum* L.); effect of gamma rays on sprouting of: levels of auxin-like substances and growth inhibitors 9
Seeds, radiation hormesis in
and seedlings; simply elusive or an artifact? 17
Seedlings, guar
primary root and lateral root development in..... 27
Seedlings, lettuce
the action of steroidal alkaloids on the ground meristem tissue of the root axis of 235
Seedlings, radiation hormesis in
and seeds, simply elusive or an artifact? 17
Seedlings, red spruce
response of growth, photosynthesis and mineral nutrition of, to ozone and acidic cloud deposition 313
Seedlings, yellow-poplar (*Liriodendron tulipifera* L.)
response of , to simulated acid rain and ozone. I. Growth modifications 59
Selenastrum capricornutum Printz
toxicity of inorganic selenium to the green alga 265
Selenium, inorganic
toxicity of, to the green alga *Selenastrum capricornutum* Printz 265
Senescence, leaf, in fern
effect of duration, intensity and quality of light on..... 181

Shoot induction
of potato protoplast-derived calli; relationship of population size and regeneration medium to growth and..... 355
Short-term flooding
physiological responses of two soybean (*Glycine max* (L.) Merr.) cultivars to 85
Simulated acid rain
lack of physiological response of two corn hybrids to 435
response of yellow-poplar (*Liriodendron tulipifera* L.) seedlings to ozone and,—2. Effect on throughfall chemistry and nutrients in the leaves 325
Simulated rain
foliar retention of ^{15}N-nitrate and ^{15}N-ammonium by red maple (*Acer rubrum*) and white oak (*Quercus alba*) leaves from 333
Spectral characteristics
of ozone-treated conifers 293
Spectral characteristics
of the light band on red clover (*Trifolium pratense* L.) 111
Spruce, red (*Picea rubens* Sarg.)
a weighing lysimeter for determining water loss in saplings of 157
effect of simulated acid rain on reproductive attributes..... 309
Spruce seedlings, red
response of growth, photosynthesis, and mineral nutrition of, to ozone and acidic cloud deposition 313
Spruce trees, young
effect of simulated acidic fog on carbohydrate leaching, CO_2 assimilation and development of damage symptoms in, (*Picea abies* L. Karst) 165
SO_2
morphogenic changes in *Eucalyptus gomphocephala* exposed to 343
yield responses of soybean, maize, peanut and navy bean exposed to HF, , and their combination 215
Sodium chloride
responses of four *Brassica* species to..... 475
Solar irradiance, natural
changes in stomatal density in rice grown under various CO_2 regimes with 175
Soybean
influence of cadmium on the ultrastructure of developing chloroplasts in corn and 187
yield responses of maize, peanut, navy bean and, exposed to SO_2, HF and their combination..... 215
Soybean (*Glycine max* (L.) Merr.) cultivars
physiological responses of two, to short-term flooding 85
Standard unit
acid neutralizing of leaf surfaces: a call for a 35
Steroidal alkaloids
the action of , on the ground meristem tissue of the root axis of lettuce seedlings 235
Stomatal density, changes in
in rice grown under various CO_2 regimes with natural solar irradiance..... 175
Stress, drought
response of four *Brassica* species to 93
Substrates, slate
the influence of calcium and magnesium on the growth of the lichens *Parmelia saxatilis* and *Xanthoria parietina* on .. 51
Sulfur dioxide; effects of
and ozone on two epiphytic orchids 207
Sunflower
influence of SO_2 and O_3, singly or in combination, on ethylene synthesis in..... 193
Tall fescue, osmotic adjustment in tissues of,
in response to water deficit..... 149
Technetium-99
phytotoxic effects of, in beans: influence of cotyledon excision 271
Temperature, canopy
a comparison of pressure chamber, leaf-press, and, for four species under humid conditions..... 75
Throughfall chemistry
response of yellow-poplar (*Liriodendron tulipifera* L.) seedlings to simulated acid rain and ozone—2. Effect on nutrients in the leaves and 325
Tissue culture, of carrot (*Daucus carota* L.)
the effects of gamma irradiation on the growth and cytology of 361
Tissues, osmotic adjustment in
of tall fescue in response to water deficit..... 149
Tomato
uptake and development of phytotoxicity following exposure to vapour of the herbicide ^{14}C 2,4-D butyl by tomato and lettuce plants 405

Tomato, processing
growth and yield responses of , (*Lycopersicon esculentum* Mill.) cultivars to ozone 283
Toxicity, of inorganic selenium
to the green alga *Selenastrum capricornutum* Printz 265
Transplants
root growth and root-shoot interaction in, and direct-seeded pepper plants 349
Trichlorfon
physiological alterations induced by the organophosphorus insecticide, in *Anabena* PCC 7119 grown with nitrates 119
Trifolium pratense L. (red clover)
spectral characteristics of the light band on 111
Ultrastructure, of developing chloroplasts
in soybean and corn; influence of cadmium on the 187
Uptake, herbicide vapour
uptake and development of phytotoxicity following exposure to vapour of the herbicide ^{14}C 2,4-D butyl by tomato and lettuce plants 405
Uptake and translocation of Ca
effects of Ca supply and stress on , in two poinsettia cultivars 525
U.v.
-induced blackening of rose petals..... 455
U.v.-B and ozone, combination of
reduces pollen tube growth more than either stressor alone 451
Variation, seasonal
of elemental status in the lichen *Ramalina menziesii* Tayl. from two sites in southern California: evidence for dry deposition accumulation..... 415
Vicia faba L., root meristems of
analysis of mitotic synchrony induced by cold treatment in 373
Water deficit
osmotic adjustment in tissues of tall fescue in response to 149
Water loss, determining
a weighing lysimeter for, in red spruce saplings (*Picea rubens* Sarg.)..... 157
Water relations
and growth of *Heterotheca subaxillaris* in different soil and watering treatments in the greenhouse 67
Water relations
influence of flood-preconditioning and drought on leaf gas exchange and , in seedlings of pecan 489
Wetland plants
artificial sediments for use in tests with 391
White oak (*Quercus alba*)
foliar retention of ^{15}N-nitrate and ^{15}N-ammonium by red maple (*Acer rubrum*) and , leaves from simulated rain 333
Xanthoria parietina
and *Parmelia saxatilis*; the influence of calcium and magnesium on the growth of the lichens, on slate substrates... 51
Yellow-poplar (*Liriodendron tulipifera* L.)
response of , seedlings to simulated acid rain and ozone—2. Effect of throughfall chemistry and nutrients in the leaves 325
Yellow-poplar (*Liriodendron tulipifera* L.) seedlings
response of , to simulated acid rain and ozone—1. Growth modifications 59
Yield
and growth responses of processing tomato (*Lycopersicon esculentum* Mill.) cultivars to ozone..... 283
Yield responses
of soybean, maize, peanut and navy bean exposed to SO_2, HF and their combination 215
Zea mays L.
lateral root primordium inception in 225